

ORIGINAL

Signature notice

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FILED
DISTRICT COURT OF GUAM

DEC - 4 2007

JEANNE G. QUINATA
Clerk of Court

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF GUAM

UNITED STATES OF AMERICA,)
)
Plaintiff,)
)
v.)
)
GUAM WATERWORKS AUTHORITY)
and the GOVERNMENT OF GUAM,)
)
Defendants.)

CIVIL CASE NO. 02-00035

**NOTICE OF LODGING OF
ORIGINAL SIGNATURE**

COMES NOW the United States and lodges with the Court, the original signature, of the
Declaration of Michael J. Lee, in Support of United States' Response to Defendants' Motion for

1 Dispute resolution , in the above entitled case, facsimile copy of which was previously filed on
2 November 28, 2007.

3 Respectfully submitted this 3rd day of December, 2007.
4

5 LEONARDO M. RAPADAS
6 United States Attorney
7 Districts of Guam and NMI

8 By:

9 MIKEL W. SCHWAB
10 Assistant U.S. Attorney
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UNITED STATES DISTRICT COURT

TERRITORY OF GUAM

UNITED STATES OF AMERICA,)
)
Plaintiff,)
)
vs.)
)
GUAM WATERWORKS AUTHORITY)
and the GOVERNMENT OF GUAM,)
)
Defendants.)

Civil Case No. 02-00035

DECLARATION OF MICHAEL J. LEE IN
SUPPORT OF UNITED STATES'
RESPONSE TO DEFENDANTS'
MOTION FOR DISPUTE RESOLUTION

1 I, Michael J. Lee, declare:

2 1. I am an Environmental Engineer for the Environmental Protection Agency,
3 Region IX ("EPA"). I began my employment for EPA as an Environmental Engineer in June
4 1984. I currently work in EPA's Pacific Islands Office as the Guam Water Program Lead and the
5 Clean Water Act ("CWA") National Pollutant Discharge Elimination System ("NPDES")
6 Compliance Lead for Guam and the Commonwealth of the Northern Mariana Islands. I have
7 been the Guam Water Program Lead since January 2001 and the CWA NPDES Compliance Lead
8 since June 1987. I have personal knowledge of the matters stated herein and, if called upon to
9 testify, could and would competently testify thereto.

10 2. In order to keep Guam Waterworks Authority's ("GWA") compliance efforts on
11 track, EPA has repeatedly demanded stipulated penalties for GWA's violations of the Stipulated
12 Order for Preliminary Relief ("Stipulated Order"). GWA has paid a total of \$224,750 in
13 stipulated penalties for these violations, including the following instances:

Date	EPA's Demand	Stipulated Order Paragraph(s)
January 22, 2004	\$6,000	¶37 (Chaot pump station)
March 8, 2004	\$11,000	¶11 (disinfection program)
May 18, 2005	\$17,750	¶10 (master plan); ¶45 (drinking water well rehabilitation)
August 4, 2005	\$4,000	¶11 (disinfection program); ¶37 (Chaot pump station)
August 31, 2005	\$2,000	¶17 (standby generators)
September 27, 2005	\$22,000	¶12 (chlorine monitoring)
December 6, 2005	\$32,000	¶10 (master plan); ¶15 (spare parts inventory); ¶21 (O&M manuals)
March 16, 2006	\$35,000	¶10 (master plan)
July 11, 2006	\$55,000	¶10 (master plan)
September 4, 2007	\$40,000	¶39 (Northern District STP); ¶42 (Agana STP)

1 3. GWA did not meet the original compliance deadlines in Paragraphs 39 and 42 of
2 the June 2003 Stipulated Order for the renovation of the Northern District and Agana Sewage
3 Treatment Plants ("STP"). However, EPA did not impose stipulated penalties for these
4 violations of the Stipulated Order.

5 4. After GWA had failed to meet the original compliance dates for the corrective
6 actions for the Northern District and Agana STPs set out in the June 2003 Stipulated Order, the
7 parties negotiated the current compliance schedule in Paragraphs 39 and 42. The current
8 deadlines represent a significant extension of time for GWA to complete the renovation work at
9 the Northern District and Agana STPs. For example, the deadline for renovation of the Northern
10 District STP, originally scheduled to be completed by November 26, 2004, was extended by
11 more than 27 months to March 2, 2007. Similarly, renovation of the Agana STP, originally
12 required to be completed by June 5, 2005, was now scheduled for completion 21 months later, on
13 March 2, 2007.

14 5. On March 2, 2007, GWA submitted a certification letter to EPA regarding its
15 work on the Northern District and Agana STPs renovation pursuant to Paragraphs 39 and 42 of
16 the Stipulated Order. A true and correct copy of this letter is attached as Exhibit 1 to this
17 declaration.

18 6. On April 30, 2007, GWA submitted a certification letter to EPA regarding its
19 Paragraph 42 obligations under the Stipulated Order. A true and correct copy of this letter is
20 attached as Exhibit 2 to this declaration. In that letter, GWA did not certify that it had conducted
21 and submitted an operational performance evaluation for the Agana STP.

22 7. GWA has still not conducted the operational performance evaluation required by
23 Paragraph 42 for the Agana STP, and has not submitted the evaluation to EPA.

24 8. On May 4, 2007, GWA submitted a certification letter to EPA regarding its
25 Paragraph 39 obligations under the Stipulated Order. A true and correct copy of this letter is
26 attached as Exhibit 3 to this declaration. In that letter, GWA did not certify that it had conducted
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1 and submitted an operational performance evaluation for the Northern District STP.

2 9. GWA has still not conducted the operational performance evaluation required by
3 Paragraph 39 for the Northern District STP, and has not submitted the evaluation to EPA.

4 10. Regarding the Agana main sewer pump station ("Agana SPS"), GWA submitted a
5 letter to EPA on July 24, 2007, stating that it had not met the compliance date of June 1, 2007,
6 for completion of the SPS renovation. A true and correct copy of this letter is attached as Exhibit
7 4 to this declaration.

8 11. According to information provided to me by GWA, it had planned to use certain
9 bypass pumps to allow the Agana SPS work to proceed but the pumps were not adequate to
10 handle the incoming flow. GWA indicated that it was also having difficulty obtaining funding to
11 implement the contract to renovate the Agana SPS. A true and correct copy of GWA's e-mails is
12 attached as Exhibit 5 (June 28, 2007 e-mail), Exhibit 6 (March 13, 2007 e-mail), and Exhibit 7
13 (July 18, 2007 e-mail) to this declaration.

14 12. GWA has not yet completed the renovation of the Agana SPS.

15 13. On September 4, 2007, EPA demanded a stipulated penalty of \$40,000 from
16 GWA for violations of Paragraphs 39 and 42 of the Stipulated Order. GWA disputed EPA's
17 determination in a letter dated September 11, 2007, and requested informal negotiations.
18 Representatives of the United States and GWA conferred in a conference call on September 24
19 (Pacific Daylight Time). During the call, the United States' representatives explained the basis
20 for EPA's determination that the stipulated penalties were justified.

21 14. GWA filed its motion with the Court for dispute resolution on October 29, 2007.
22 A copy of GWA's motion was not provided to EPA until October 30, 2007.

23 15. Pursuant to its NPDES permits for the Northern District and Agana STPs, GWA
24 is required to submit Discharge Monitoring Reports ("DMRs") to EPA for each STP. I have
25 reviewed GWA's DMRs for both the Northern District and Agana STPs. GWA's DMRs show
26 that the Agana STP exceeded its NPDES permit's monthly average limit for Biochemical
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1 Oxygen Demand ("BOD") in April 2007. GWA's DMRs show that the Northern District STP
2 exceeded its NPDES permit monthly average limit for BOD and its monthly average and daily
3 maximum limits for Total Suspended Solids in April 2007. Furthermore, the Northern District
4 STP has violated its permit limits in every month from April through September 2007.

5 16. Based on GWA's recent DMR data, GWA may conceivably be able to show in an
6 operational performance evaluation that the Agana STP is now able to consistently comply with
7 its NPDES permit limits. However, GWA has still not conducted an operational performance
8 evaluation to make that showing.

9 17. The renovation of the Agana SPS is directly related to GWA's ability to maintain
10 continuous compliance with its NPDES permit limits. The operational failure of the sewer pump
11 station could result in raw, untreated sewage discharging directly to waters of the United States in
12 violation of GWA's NPDES permit conditions and the CWA.

13 Executed this 27th day of November 2007 at San Francisco, California.

14 I declare under penalty of perjury under the laws of the laws of the United States
15 of America that the foregoing is true and correct.

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18 Michael J. Lee
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DECLARATION OF MICHAEL J. LEE
EXHIBIT 1



GUAM WATERWORKS AUTHORITY

Good Water Always

578 N. Marine Corps Drive, Tamuning, GU 96913-4111

Phone: (671) 647-2605 Fax: (671) 646-2335

March 2, 2007

Michael J. Lee
Manager, Pacific Islands Office (CMD-6)
U. S. Environmental Protection Agency, Region 9
75 Hawthorne Street
San Francisco, CA 94105

Dear Mike,

Pursuant to further compliance to the STIPULATED ORDER FOR PRELIMINARY RELIEF; CIVIL CASE No. 02-00035 as amended, The Guam Waterworks Authority herewith presents the reports required on or following this date as ordered, adjudged and decreed items numbered: 39. Northern District STP Renovation and 42. Hagåtña (Agana) STP Renovation.

CERTIFICATION STATEMENT

I certify under penalty of law that I have examined and am familiar with the information submitted in this document and all attachments and that this document and its attachments were prepared either by me personally or under my direction or supervision in a manner designed to ensure that qualified and knowledgeable personnel properly gathered and presented the information contained therein. I further certify, based on my personal knowledge or on my inquiry of those individuals immediately responsible for obtaining the information, that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing and willful submission of a materially false statement.

PAUL J. KEMP, M. S.

Assistant General Manager for Compliance and Safety

March 2, 2007
Date

CC: Barry Pollock, Region 9, USEPA
Ben Machol, Region 9, USEPA
John Jocson, Guam EPA
Randel L. Sablan, Guam EPA
Manuel Minas, Guam EPA
Angel Marquez, Guam EPA
Benny Cruz, Guam EPA
Consolidated Commission of Utilities
Simon Sanchez
Benigno M. Polomo
Gloria Nelson
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Doris J. Young
GWA GM
GWA Chief Engineer
GWA CFO
GWA AGM A&C
GWA AGM P&T
GWA AGM C&D
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GWA Legal Counsel
Veolia Water PMC
Rick Unpingco
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GPA GM
Sylvia I. Ipanag
Helen Kennedy for the Attorney General of Guam
Office of the Public Auditor
Public Utilities Commission
File



GUAM WATERWORKS AUTHORITY

Good Water Always

578 N. Marine Corps Drive, Tamuning, GU 96913-4111

Phone: (671) 647-2605 Fax: (671) 646-2335

March 2, 2007

Michael J. Lee
Manager, Pacific Islands Office (CMD-6)
U. S. Environmental Protection Agency, Region 9
75 Hawthorne Street
San Francisco, CA 94105

Dear Mike,

GWA herewith reports that the work called for in Paragraph 39, the Northern District Wastewater Treatment Facility Renovation has been successfully completed. Both clarifiers were put into service in August 2006. There was only one blower operable at that time. The redundant blower was put into service in November 2006.

GWA is now monitoring the performance of the restored facility and will evaluate it to determine if any process adjustments may be needed in order to meet the NPDES permit. GWA is on schedule to complete this evaluation by the May 4, 2007 compliance date.

Further, GWA herewith reports that the work called for in Paragraph 42, the Hagåtña (Agana) Wastewater Treatment Facility Renovation has been completed and successfully tested. The renovated facility will be officially put into service at the Hagåtña Wastewater Treatment Facility dedication ceremonies on March 09, 2007.

GWA will continue with the work on the Hagåtña Main Sewer Pump Station which will be inaugurated in the same ceremony that dedicates the treatment facility and is expected to be completed on schedule. We will also proceed with the operational performance evaluation of the treatment process performance to determine if any process adjustments may be needed in order to meet the NPDES permit. GWA will perform additional monitoring (at two week intervals) on the treatment facility in order to collect sufficient information to properly evaluate the system by the April 30, 2007 evaluation report compliance date.

GWA therefore submits that the work specified completion by this date has been done.
Respectfully submitted,

PAUL J. KEMP, M. S.
Assistant General Manager for Compliance and Safety

March 2, 2007
Date

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11 DECLARATION OF MICHAEL J. LEE
12 EXHIBIT 2
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GUAM WATERWORKS AUTHORITY

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Phone: (671) 647-2605 Fax: (671) 646-2335

April 30, 2007

Michael J. Lee
Manager, Pacific Islands Office (CMD-6)
U. S. Environmental Protection Agency, Region 9
75 Hawthorne Street
San Francisco, CA 94105

Dear Mike,

Pursuant to further compliance to the STIPULATED ORDER FOR PRELIMINARY RELIEF; CIVIL CASE No. 02-00035 as amended, The Guam Waterworks Authority herewith presents the reports required on or following this date as ordered, adjudged and decreed items numbered: 42 Hagåtña STP Renovation: Performance Evaluation Report.

CERTIFICATION STATEMENT

I certify under penalty of law that I have examined and am familiar with the information submitted in this document and all attachments and that this document and its attachments were prepared either by me personally or under my direction or supervision in a manner designed to ensure that qualified and knowledgeable personnel properly gathered and presented the information contained therein. I further certify, based on my personal knowledge or on my inquiry of those individuals immediately responsible for obtaining the information, that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing and willful submission of a materially false statement.

PAUL J. KEMP, M. S.

Assistant General Manager for Compliance and Safety

April 30, 2007

Date

**CC: Barry Pollock, Region 9, USEPA
Lorilee T. Crisostomo, Guam EPA
Manuel Minas, Guam EPA
Angel Marquez, Guam EPA
Benny Cruz, Guam EPA
Consolidated Commission of Utilities**

**Simon Sanchez
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**GWA GM
GWA Chief Engineer
GWA CFO
GWA AGM A&C
GWA AGM P&T
GWA AGM C&D
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GWA Legal Counsel
Veolia Water PMC
Rick Unpingco
Cathy Manglona**

**GPA GM
Sylvia I. Ipanag
Helen Kennedy for the Attorney General of Guam
Office of the Public Auditor
Public Utilities Commission
File**



Performance Evaluation of the GWA Hagåtña Wastewater Treatment Facility

Background

On October 19, 2006, U.S. DOJ in agreement with GWA and EPA filed a Stipulation Amended Stipulated Order for Preliminary Relief with the District Court of Guam, Civil No. 02-00035 (SO). Paragraph 42 of the SO requires GWA to complete all renovations of the Hagåtña Wastewater Treatment Plant (HWWTP) by March 2, 2007. This work was completed and EPA was duly notified. Paragraph 42 further requires that after completion of the corrective action, GWA must conduct a performance evaluation to determine whether or not advanced primary treatment is needed to comply with NPDES permit effluent limitations. This is to be completed by April 30, 2007 and a report submitted to EPA. This document and its attachments are submitted pursuant to this requirement.

Summary

GWA does not believe that two months of operation are adequate to fully optimize and assess the treatment capabilities of the newly rehabilitated plant. GWA is providing a detailed plan and schedule for needed optimization and realistic assessment.

Data Review

The Hagåtña WWTP exceeded only the monthly average for BOD5 and TSS for the two months that the plant has been on line. The data has shown an overall downward trend in the two months, and is very close to NPDES permit compliance.

BOD5 is within or in exceedence of the expected removal percentages for primary treatment, and based upon effluent values, maintaining that removal rate will allow the plant to continue to meet the removal efficiencies.¹

TSS removal efficiencies are slightly below the expected removal percentages for primary treatment. Increasing removal efficiencies to industry standard will bring the effluent well below the permit requirements.

¹ This refers to the expected treatment process removal efficiencies (Metcalf & Eddy, *Wastewater Engineering Treatment Disposal Reuse*, 3rd Edition), not to the BOD & TSS removal efficiencies of 30% required by the 301(h) waiver, which the plant currently meets.

Probable Causes

Potential causes of the minor exceedences include excessive loading of inorganic material (grit) and non-optimal plant operations. GWA has plans to address both issues quickly.

Planned Actions

Optimize plant operations

Prior to March 2007, the Hagåtña WWTP had not operated correctly for many years. The plant equipment has now been replaced and, in some cases, updated. During the first two months of operation, the mechanical equipment was tested and optimized. Mechanical issues that have developed during early operation of the new equipment are still undergoing final adjustment, which is normal for a project of this scope.

Now that the mechanical equipment is functioning to specifications, GWA has begun to implement monitoring based process controls in order to optimize plant operation. This includes a series of laboratory analyses at various points in the process and a review of other process information, such as clarifier weir overflow rates and sludge removal volumes.

A formal plan, including schedule and target dates, is attached (See Attachment A). The list of process control calculations is included in Attachment B. These calculations will be completed as the appropriate laboratory data identified in the schedule is collected.

Install Grit Removal

GWA is making the addition of grit removal facilities to the Hagåtña WWTP influent a priority, both in order to improve processing of wastewater and biosolids and to protect the new plant equipment. Final decisions regarding the type of equipment and the location of the installation are currently in review, along with an evaluation of costs, availability of funding, or alternative funding options. A preliminary timeline for the installation of a grit removal system is attached; this timeline may be subject to change based upon the type and location of the system to be installed.

Follow-Up

It is expected that the above actions will bring the Hagåtña WWTP into full compliance with all parameters of its NPDES permit. In the unlikely event that three months of DMR data after the completion of these actions shows

continuing noncompliance, GWA will commence chemical evaluation testing for optimization analysis and design of a possible system for chemically enhanced advanced primary treatment. In this case, GWA would also complete an economic cost benefit analysis to compare long term chemical and O&M costs vs. capital debt service and O&M costs of a secondary wastewater treatment plant.

GWA proposes to provide U.S. EPA with monthly updates on the schedule in Attachment A. This will allow EPA to regularly evaluate progress and preserve assurances that GWA is maintaining the schedule. Should EPA choose to propose an alternate schedule of reporting, GWA will be pleased to comply.

GWA strongly feels that any chemical evaluation testing completed prior to completion of the actions discussed above would not provide meaningful results, and that such results would be rendered obsolete once the operating optimization has been completed.

Once the plant has been adjusted to its best performance, GWA will continue process monitoring and to maintain the highest standard of operational efficiency.

Attachment A: Performance Improvement Plan and Schedule

The attached Gantt chart provides a schedule for the actions discussed in this report. These include increased sampling and analysis and operating adjustments based on them.

GWA plans to create a dedicated wastewater laboratory at the Hagåtña WWTP. This will allow for rapid process sampling and analysis in order to adjust and control plant operations. Until this laboratory is fully operational, some additional sampling will be conducted at the main Dededo laboratory. Sampling will be conducted in accordance with the schedule in Table 1. The Gantt chart provides a detailed schedule for this sampling and analysis.

The Gantt chart also has a preliminary schedule for addition of grit removal to the Hagåtña WWTP. Rather than merely replacing the airlift system at the Agana Main Pump Station, GWA is looking for a more effective, longer term solution.

In the unlikely event that after these efforts are implemented the plant still does not meet the permit requirements, GWA has also provided a schedule for chemical evaluation testing for chemically enhanced advanced primary treatment and a concurrent economic analysis to determine if the annual debt service on the capitalization of a secondary treatment facility would be more economical for the Island's ratepayers.

Table 1: Process Control Sampling Hagåtña Plant

Until Hagåtña lab is on-line & composite samplers have been obtained

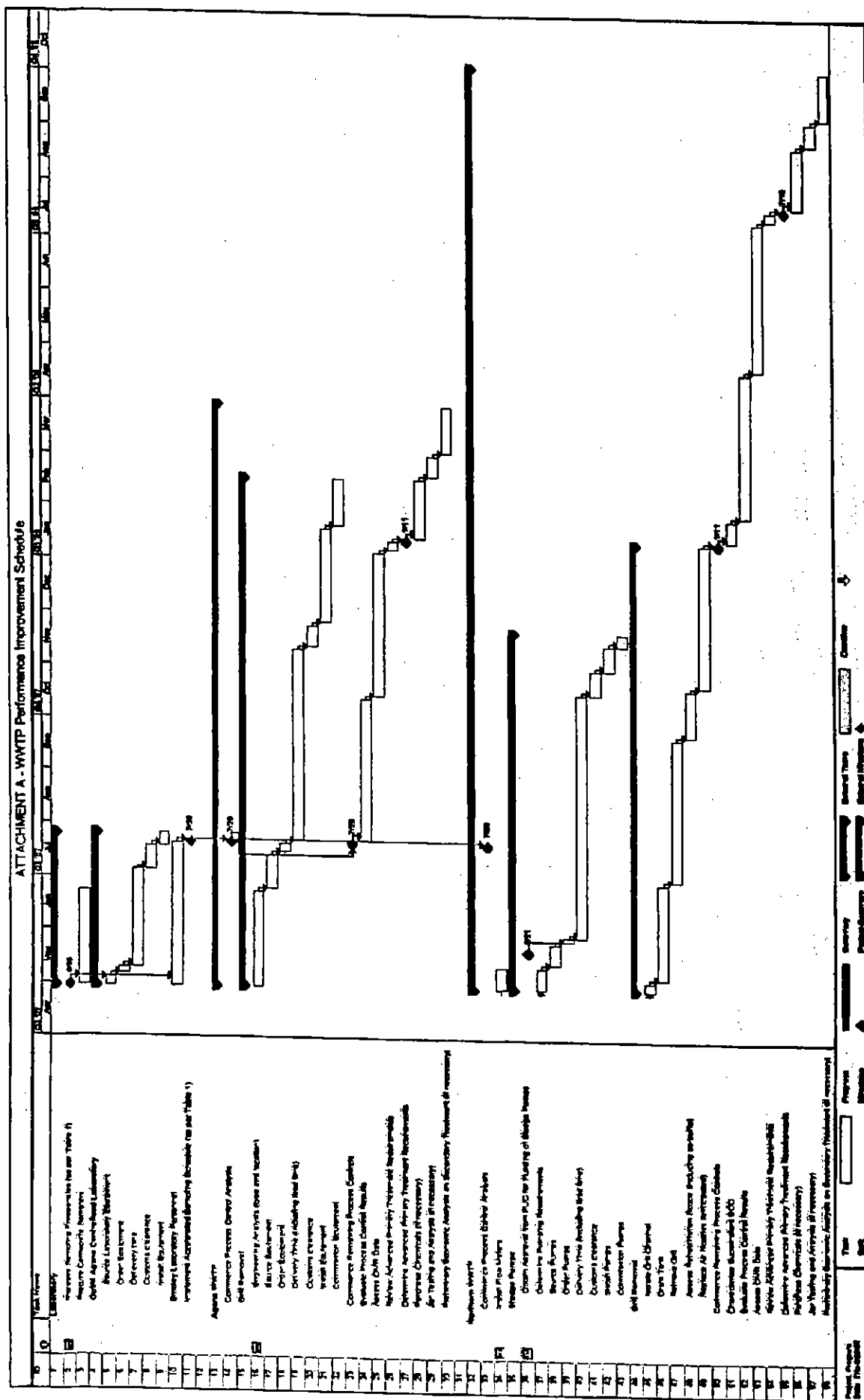
Parameter	Type of sample	Test	Units	S1	S2
Location				Influent (w/o Returns)	Effluent
Type of sample				Composite - 24h	Composite - 24h
pH	Grab	4500-H ⁺ ; 150.1 Electrometric*	pH	5/week on site + 1/week in Dededo lab	5/week on site + 1/week in Dededo lab
DO	Grab	SM 4500-O G. 360.1*	mg/L	5/week on site	5/week on site
SS	Composite - 3x/24hr	SM 2540	mg/L	2/week in Dededo lab	2/week in Dededo lab
BOD5	Composite - 3x/24hr	SM 5210 B.; 405.1	mg/L	2/week in Dededo lab	2/week in Dededo lab
COD Cr	Composite - 3x/24hr	Titrimetric 410.1-3	mg/L	2/week in Dededo lab	2/week in Dededo lab
Settleable solids	Composite - 3x/24hr	SM 2540 F.	mg/L		2/week in Dededo lab

Once Hagåtña Lab is on-line

Parameter	Type of sample	Test	Units	S1	S2	S3	S4
Location				Influent (w/o Returns)	Effluent	Centrate	Supernatant
Type of sample				Composite - 24h	Composite - 24h	grab sample	
pH	Composite - 24h	4500-H ⁺ ; 150.1 Electrometric*	pH	5/week on site + 1/week in Dededo lab	5/week on site + 1/week in Dededo lab	5/week on site (or online) + 1/week in lab	5/week on site (or online) + 1/week in lab
DO	Composite - 24h	SM 4500-O G. 360.1*	mg/L	5/week on site	5/week on site		
SS	Composite - 24h	SM 2540 D.	mg/L	3/week in Central lab	3/week in Central lab	5/week in lab	5/week in lab
BOD5	Composite - 24h	SM 5210 B.; 405.1	mg/L	3/week in Central lab	3/week in Central lab	5/week in lab	5/week in lab
COD Cr	Composite - 24h	Titrimetric 410.1-3	mg/L	3/week in Central lab	3/week in Central lab	5/week in lab	5/week in lab
Settleable solids	Composite - 24h	SM 2540 F.	mg/L		3/week in Central lab		

Note: Transition to Hagåtña Lab schedule will proceed as equipment comes on-line rather than all at once.

*In accordance with manufacturers instructions for probe use



Attachment B: Hagåtña Treatment Plant Process Control Calculations

Process Control Item	Units
Totalized Flow per day	MGD
Primary Clarifier Flow Velocity ¹	ft/min
Primary Clarifier Detention Time ¹	Hrs
Primary Sludge Pumping Time ¹	Min/hr
Aerobic Digestion Volatile Solids Reduction	Percentage
Biosolids Production	Dry tons/Day
Polymer Usage	Lbs/dry ton
BOD Removal Efficiency	Percentage
Suspended Solids Removal Efficiency	Percentage
Settleable Solids Removal Efficiency	Percentage

¹Computed for each unit in service

The above information will be tabulated in an Excel spreadsheet. In some cases (i.e. removal efficiencies) calculations will be performed as laboratory equipment, staff and procedures become available to obtain the information required. In other areas (e.g. detention times and polymer usage), data collection has already begun.

Data will be provided to GEPA and US EPA Region IX monthly or on a schedule determined by EPA.

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14 DECLARATION OF MICHAEL J. LEE
15 EXHIBIT 3
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GUAM WATERWORKS AUTHORITY

Good Water Always

578 N. Marine Corps Drive, Tamuning, GU 96913-4111

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May 04, 2007

Michael J. Lee
Manager, Pacific Islands Office (CMD-6)
U. S. Environmental Protection Agency, Region 9
75 Hawthorne Street
San Francisco, CA 94105

Dear Mike,

Pursuant to further compliance to the **STIPULATED ORDER FOR PRELIMINARY RELIEF; CIVIL CASE No. 02-00035** as amended, The Guam Waterworks Authority herewith presents the reports required on or following this date as ordered, adjudged and decreed items numbered: 39 Northern District STP Renovation: Performance Evaluation Report.

CERTIFICATION STATEMENT

I certify under penalty of law that I have examined and am familiar with the information submitted in this document and all attachments and that this document and its attachments were prepared either by me personally or under my direction or supervision in a manner designed to ensure that qualified and knowledgeable personnel properly gathered and presented the information contained therein. I further certify, based on my personal knowledge or on my inquiry of those individuals immediately responsible for obtaining the information, that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing and willful submission of a materially false statement.

PAUL J. KEMP, M. S.

Assistant General Manager for Compliance and Safety

May 04, 2007

Date

CC: Barry Pollock, Region 9, USEPA
Lorilee T. Crisostomo, Guam EPA
Manuel Minas, Guam EPA
Angel Marquez, Guam EPA
Benny Cruz, Guam EPA
Consolidated Commission of Utilities
Simon Sanchez
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Bernadette Lou Sablan
Art Perez
Heidi Ballendorf
Yvonne M. Cruz
Doris J. Young
GWA GM
GWA Chief Engineer
GWA CFO
GWA AGM A&C
GWA AGM P&T
GWA AGM C&D
GWA AGM C&S
GWA Legal Counsel
Veolia Water PMC
Rick Unpingco
Cathy Manglona
GPA GM
Sylvia I. Ipanag
Helen Kennedy for the Attorney General of Guam
Office of the Public Auditor
Public Utilities Commission
File



Performance Evaluation of the GWA
Northern District
Wastewater Treatment Plant

Background

On October 19, 2006, U.S. DOJ in agreement with GWA and EPA filed a Stipulation Amended Stipulated Order for Preliminary Relief with the District Court of Guam, Civil No. 02-00035 (SO). Paragraph 39 of the SO requires GWA to complete all renovations of the Northern District Wastewater Treatment Plant (ND WWTP) by March 2, 2007. This work was completed with the exception of five of the six sludge pumps and half of the aerated grit removal system (See "Planned Actions" below). EPA was duly notified of all repair work that was completed. Paragraph 39 further requires that after completion of the corrective action GWA conduct a performance evaluation to determine whether or not advance primary treatment is needed to comply with NPDES permit effluent limitations. This is to be completed by May 4, 2007 and a report submitted to EPA. This document and its attachments are submitted pursuant to this requirement.

Summary

Since GWA is still working to complete mechanical repairs, GWA does not believe that the requirements for additional treatment can be properly assessed until additional sludge pumps have been procured and plant operations have been fully optimized and assessed. GWA is providing a detailed plan and schedule for needed pump replacement, optimization and assessment.

Data Review

For the last year, the Northern District WWTP exceeded the BOD and TSS loading and concentration limits. The plant has shown an increased ability to improve removal efficiencies, and this trend is expected to continue.

Probable Causes

Potential causes of the exceedances include inaccurate estimates of flow for developing loading values, dysfunctional mechanical equipment and a lack of process controls. GWA plans to address all of these issues in the very near term. It is also possible that digester supernatant returns high in soluble BOD are impacting BOD removal efficiencies, and assessment of this issue is also included in the plan.

Planned Actions

Replace Sludge Pumps

During 2006, the Northern District WWTP went through numerous repairs, including the clarifiers and one of the preaerators. This improved the plant's solids removal efficiencies beyond the ability of the decrepit sludge pumps to extract it. Some of the funding originally earmarked to replace the sludge pumps was diverted to ensure that GWA is maintaining adequate reserve funds in order to comply with the Stipulated Order and bond covenant requirements. Funding has since been located, and as soon as Public Utilities Commission approval has been granted, the sludge pumps will be replaced in accordance with the attached schedule.

Additionally, GWA will be repairing the second aerated grit removal system although the lack of this system is not expected to greatly impact effluent results. It will, however, provide system redundancy.

Provide Process Controls

GWA has begun implementing process controls in order to optimize plant operation. This will include a series of regular analyses at various points in the process and a review of other process information, such as clarifier weir overflow rates, inlet chamber detention times and sludge removal volumes. Feedback from this information is expected to significantly improve plant operation and treatment efficiencies.

A formal plan, including schedule and target dates, is attached.

Install Flow Monitoring

GWA has not had reliable flow monitoring at the Northern District Plant, and feels that the loading data may therefore be inaccurate. Manual measurements at the Parshall flume are not continuous and are likely rendered inaccurate by the turbulence in the channel. GWA installed a temporary flow monitoring device in a less turbulent portion of the channel on May 1, 2007 and is planning for improved long term flow monitoring. The temporary device is a Teledyne ISCO 2150 Area Velocity Flow Module and sensor, which will continuously collect data for download.

Improved Laboratory Sampling and Analysis

Along with the process control analysis and implementation, GWA also plans to review the sampling and analysis program at the ND WWTP to verify that data is as accurate as possible. A new laboratory at the Agana WWTP will verify data results and provide additional data (see Hagåtña report submitted April 30, 2007). This service will be used until the laboratory at ND WWTP can be refurbished to handle the operating tests.

Solids handling

The biosolids are currently trucked to the Hagåtña WWTP and processed via the aerated digesters and the centrifuges. Once the sludge pumps are efficiently removing sludge the biosolids will have compliant treatment. Although GWA does have long term plans to repair the anaerobic digesters at the ND WWTP, other funding priorities are more critical. As long as Hagåtña has capacity to handle the ND sludge, this will remain a suitable method of solids handling.

Should process control sampling and analysis show that supernatant from the currently dysfunctional digesters is impacting the ability of the ND WWTP to meet its permit limits (e.g. BOD₅), this item will be reassessed and reprioritized.

Follow-Up

It is expected that the above actions will bring the Northern District WWTP into full compliance with all parameters of its NPDES permit. In the unlikely event that three months of DMR data after the completion of these reconstructive actions shows continuing noncompliance, GWA will immediately commence chemical evaluation testing for process improvement and proceed to the design of a system for advanced primary treatment. In this case, GWA would also complete an economic and cost benefit analysis to compare long term chemical and O&M costs vs. capital debt service and O&M costs of a secondary wastewater treatment plant.

GWA strongly feels that any alternative process evaluation testing completed prior to completion of the actions discussed above would not provide accurate results, and that the results would be rendered inaccurate, obsolete and inappropriate once the planned actions have been completed.

When the plant has been optimized, GWA will continue to perform process monitoring and to maintain the highest standard of operational efficiency.

Attachment A: Performance Improvement Plan and Schedule

The attached Gantt chart provides a schedule for the actions discussed in this report. These include increased sampling and analysis. One item to bring to your attention in the schedule is the characterization of the digester supernatant BOD (return from the anaerobic digesters). Determination of the amount and solubility of the BOD in the return flow will dramatically assist GWA in making determinations regarding future repair priorities and treatment options.

GWA is creating a process control laboratory at the Hagåtña WWTP. Having this dedicated wastewater laboratory will allow GWA to complete more process sampling and get analytical data more rapidly in order to optimize plant operations. Until this laboratory is fully operational, some additional sampling will be analyzed at the Dededo laboratory. Sampling will be conducted in accordance with the schedule in Table 1. The Gantt chart includes a detailed schedule for the sampling and analysis.

The Gantt chart also includes a schedule for procurement and installation of new sludge transfer pumps at the Northern District WWTP. Because bond funding will be utilized and there is not currently a bond project identified for ND, review by the Public Utility Commission will need to be obtained for the project. The PUC meets on May 17-18, and no difficulties are anticipated for obtaining the approval.

Further the Gantt chart has a schedule for repair of the grit removal to the Northern District WWTP. This work will be initiated as O&M and any repairs that are needed will be completed as a performance improvement project.

In the unlikely event that after these efforts are implemented the plant still does not meet the permit requirements, GWA has also provided a schedule for chemical evaluation testing for advanced primary treatment and a concurrent economic analysis to determine if the annual debt service on the capitalization of a secondary treatment facility would be more economical for the Island's ratepayers.

Table 1: Process Control Sampling Northern Plant

Until Hagáña lab is on-line & composite samplers have been obtained

Parameter	Location	Type of sample	Test	Units	S1 Influent	S2 Effluent
pH		Grab	SM 4500-H ⁺ B.*	pH	5/week on site + 1/week in Dededo lab	5/week on site + 1/week in Dededo lab
DO		Grab	SM 4500-O G.*	mg/L	5/week on site	5/week on site
TSS		Composite - 3x/24hr	SM 2540 D.	mg/L	2/week in Dededo lab	2/week in Dededo lab
BOD ₅		Composite - 3x/24hr	SM 5210 B.	mg/L	2/week in Dededo lab	2/week in Dededo lab
COD Cr		Composite - 3x/24hr	SM 5220	mg/L	2/week in Dededo lab	2/week in Dededo lab
Settleable solids		Composite - 3x/24hr	SM 2540 F.	mg/L		2/week on site

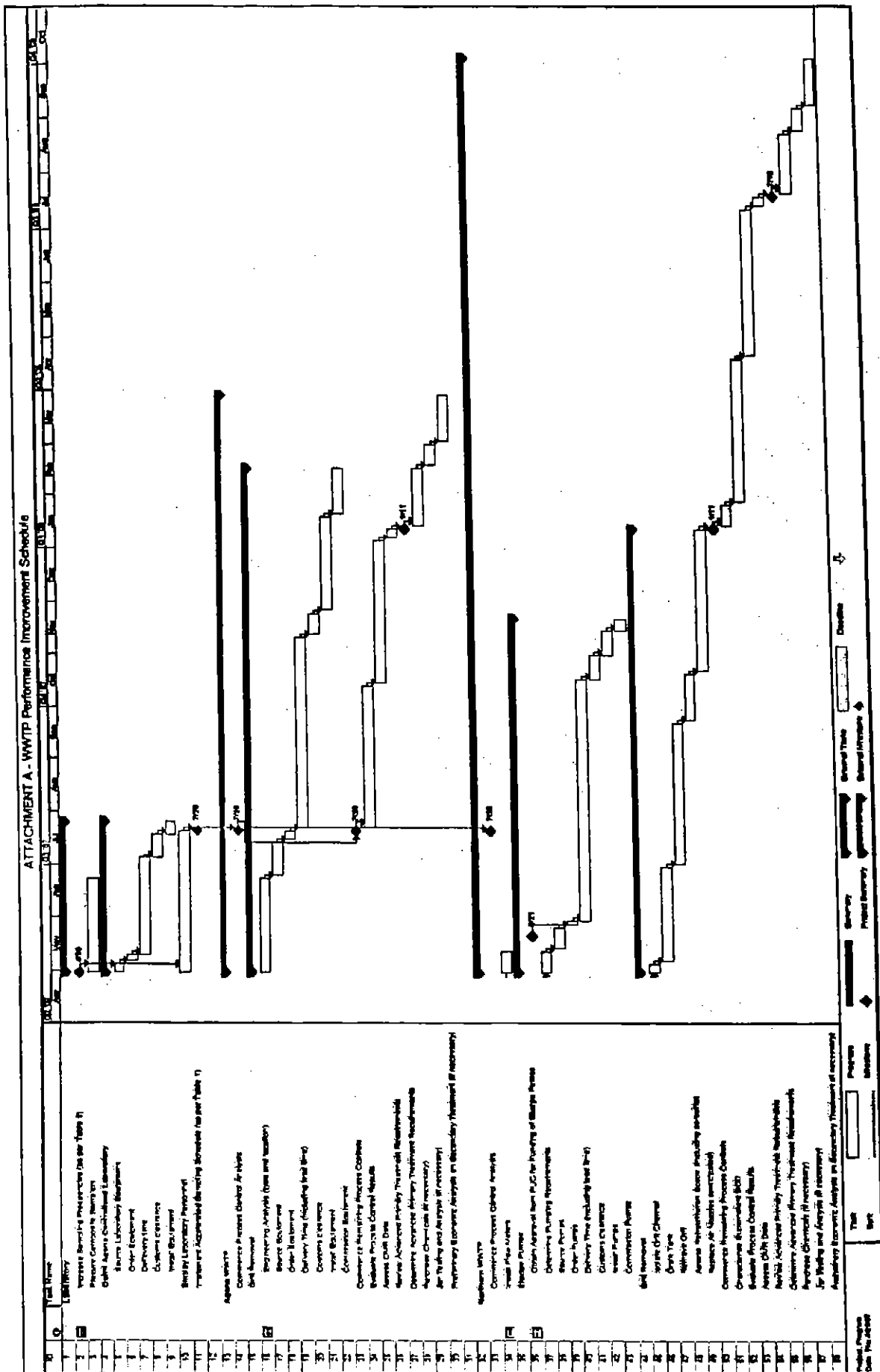
Once Hagáña lab is on-line

Parameter	Location	Type of sample	Test	Units	S1 Influent	S2 Effluent
pH		Composite - 24h	SM 4500-H ⁺ B.*	pH	5/week on site + 1/week in Dededo lab	5/week on site + 1/week in Dededo lab
DO		Composite - 24h	SM 4500-O G.*	mg/L	5/week on site	5/week on site
TSS		Composite - 24h	SM 2540 D.	mg/L	3/week in Hagatna lab	3/week in Hagatna lab
BOD ₅		Composite - 24h	SM 5210 B.	mg/L	3/week in Hagatna lab	3/week in Hagatna lab
COD Cr		Composite - 24h	SM 5220	mg/L	3/week in Hagatna lab	3/week in Hagatna lab
Settleable solids		Composite - 24h	SM 2540 F.	mg/L		5/week in Hagatna lab

Note: Transition to Hagáña Lab schedule will proceed as equipment comes on-line rather than all at once.

*In accordance with manufacturers instructions for probe use

**S0 39 Performance Evaluation of the Northern District
Wastewater Treatment Plant**



**Attachment B: Northern District Wastewater Treatment Plant Process Control
Calculations**

Process Control Item	Units
Totalized flow per day	MGD
Pre-aeration tank Detention Time ⁽¹⁾	Minutes
Grit chamber Detention Time ⁽¹⁾	Minutes
Grit Channel Velocity ⁽¹⁾	ft/sec
Grit Removal Quantity	ft ³ /MGD
Primary Clarifier Surface Loading ⁽¹⁾	gpd/ft ²
Primary Clarifier Weir Overflow Rate ⁽¹⁾	gpd/ft
Primary Clarifier Detention Time ⁽¹⁾	Hrs
Primary Sludge Pumping Time ⁽¹⁾	Min/hr
BOD Removal Efficiency	Percentage
Suspended Solids Removal Efficiency	Percentage
Settleable Solids Removal Efficiency	Percentage

⁽¹⁾Computed for each unit in service

The above information will be tabulated in an Excel spreadsheet. In some cases (i.e. removal efficiencies) calculations will be performed as laboratory equipment, staff and procedures become available to obtain the information required. In other areas (e.g. detention times and polymer usage), data collection has already begun. Additional data on BOD solubility will also be provided as shown in the schedule in Attachment A.

Data will be provided to EPA Region IX monthly or on a schedule determined by EPA.

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DECLARATION OF MICHAEL J. LEE
EXHIBIT 4



GUAM WATERWORKS AUTHORITY

Good Water Always

578 N. Marine Corps Drive, Tamuning, GU 96913-4111

Phone: (671) 647-2605 Fax: (671) 646-2335

July 24, 2007

Michael J. Lee

Manager, Pacific Islands Office (CMD-6)

U. S. Environmental Protection Agency, Region 9

75 Hawthorne Street

San Francisco, CA 94105

Dear Mike,

Pursuant to further compliance to the **STIPULATED ORDER FOR PRELIMINARY RELIEF; CIVIL CASE No. 02-00035 as amended**, The Guam Waterworks Authority herewith presents the reports required on or following this date as ordered, adjudged and decreed items numbered: 48, Notice of expected non compliance or delay of work under Paragraph 42, refurbishment of the Hagåtña Main Lift Station.

CERTIFICATION STATEMENT

I certify under penalty of law that I have examined and am familiar with the information submitted in this document and all attachments and that this document and its attachments were prepared either by me personally or under my direction or supervision in a manner designed to ensure that qualified and knowledgeable personnel properly gathered and presented the information contained therein. I further certify, based on my personal knowledge or on my inquiry of those individuals immediately responsible for obtaining the information, that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing and willful submission of a materially false statement.

PAUL J. KEMP, M. S.

Assistant General Manager for Compliance and Safety

July 24, 2007

Date

CC: Barry Pollock, Region 9, USEPA
Ben Machol, Region 9, USEPA
Lorilee T. Crisostomo, Guam EPA
Manuel Minas, Guam EPA
Angel Marquez, Guam EPA
Benny Cruz, Guam EPA
Consolidated Commission of Utilities
Simon Sanchez
Benigno M. Polomo
Gloria Nelson
Eloy Hara
Bernadette Lou Sablan
Art Perez
Heidi Ballendorf
Yvonne M. Cruz
Doris J. Young
GWA IGM
GWA Chief Engineer
GWA CFO
GWA AGM A&C
GWA AGM P&T
GWA AGM C&D
GWA AGM C&S
GWA Legal Counsel
Veolia Water PMC
Helen Kennedy for the Attorney General of Guam
Office of the Public Auditor
Public Utilities Commission
File

Attachments: Narrative Letter (Pages 3 – 4.)
Proposed Schedules
Page 5 – Initial plan schedule
Page 6 – GWA preferred project plan schedule
Page 7 – Alternative quicker/higher-risk plan
schedule.



GUAM WATERWORKS AUTHORITY

Good Water Always

578 N. Marine Corps Drive, Tamuning, GU 96913-4111

Phone: (671) 647-2605 Fax: (671) 646-2335

May 30, 2007

Michael J. Lee
Manager, Pacific Islands Office (CMD-6)
U. S. Environmental Protection Agency, Region 9
75 Hawthorne Street
San Francisco, CA 94105

Dear Mike,

Pursuant to the discussions with GWA Engineering section previously submitted, I am here quoting Julie Shane's current narrative:

Paragraph 42 [of the amended Stipulated Order] requires GWA to provide a schedule for completing the repairs to the Agana Main Sewage Pump Station [See also Paragraph 40]. As we have discussed, the originally provided schedule has been delayed because of the difficulty in bypassing the station while continuing to treat the influent at the Agana Wastewater Treatment Plant.

Attached are two optional schedules for obtaining the materials and performing the work needed to complete the bypass. The first option includes obtaining the bypass pump and in the second scenario we would proceed without it. The risk with proceeding [without the bypass pump] is that any pump failure would result in a wastewater plant bypass, and there is also a potential for [wastewater plant] bypass during major wet weather events.

The materials for the surge tank are required in the event of a catastrophic pump failure so that the line can gravity flow directly to the outfall (bypassing the plant). However, the goal is to provide adequate capacity to minimize or eliminate bypassing of the treatment plant. In order to maintain the option of both pumping and emergency bypass, a valve is required and this element is the long lead item. We are going to do our best to locate a valve on-island and minimize this time frame.

Please be advised that should we choose the third option of bypassing the wastewater plant for the duration of the project, the option to pump would not be required so the timeframe for the bypass as discussed above would be greatly shortened (we would not need the valve in this case). However, there will be some time involved in removing the existing plugs in the line, as they are inserted quite far up the pipe (they were meant to be permanent) and safety will be paramount.

Once any option up and running, the work will commence. The timeline is the same as that which was previously provided (copy attached), however, the schedule will be pushed back. The start date will be the same as the date the bypass is completed.

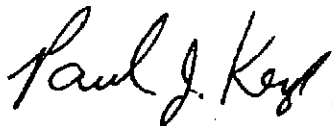
Pending your approval, we are proceeding with the task items listed in the bypass schedule. Should you have any questions or require further information please contact Supervising Wastewater Engineer Julie Shane at 671-647-2612.

End Quote - - - -

As we have previously reported, the June 01, 2007 compliance date for the completion of the refurbishment of the Hagåtña Main wastewater lift station has not been met. Per the discussions you have had with GWA engineering, we are now asking for your recommendation of which project option we should pursue. The project completion time will then be set by that decision.

Because of the special considerations in making our best efforts to avoid any bypass of the Hagåtña treatment plant, GWA requests that the delay be considered as non-material.

Sincerely,



PAUL J. KEMP, M. S.
Assistant General Manager for Compliance and Safety

July 24, 2007
Date

PJK/jrs

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DECLARATION OF MICHAEL J. LEE
EXHIBIT 5

"Julie Shane"

<jshane@guamwaterworks.org>

To

Michael Lee/R9/USEPA/US@EPA

06/28/2007 03:02

cc

PM

"Paul Kemp"

<paulkemp@guamwaterworks.org>,

"Don Antrobus"

<dantrobus@guamwaterworks.org>,

"Kevin Patrick"

<kevin.patrick@veoliawater.com.hk

>

Subject

Agana Main SPS

Mike,

As we discussed today, the pumps that GWA was planning to use for the bypass are inadequate to handle the incoming flow. We are planning to order a couple of portable bypass pumps to have on hand for emergencies that should assist with this problem and help us avoid bypassing the treatment plant. However, identifying funds and ordering the pumps will take several months (we guessed about four; I'll update you if that changes) and push the project back that long. The alternative is to bypass the treatment plant. You indicated that your preference is to wait for the additional pumping capacity, but that you would verify and let us know for certain. We look forward to your response.

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14 DECLARATION OF MICHAEL J. LEE
15 EXHIBIT 6
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>>> <dantrobus@guamwaterworks.org>
>>> Cc: <Pollock.Barry@epa.gov>; <benny.cruz@guamepa.net>; "Mark Miller"
>>> <mgmiller@gmail.com>; <sadler@guamwaterworks.org>;
>>> <manuel.minas@guamepa.net>; "Paul Kemp"
<paulkemp@guamwaterworks.org>;
>>> "David R. Craddick" <gmgwa@guamwaterworks.org>
>>> Sent: Tuesday, March 13, 2007 4:34 PM
>>> Subject: RE: FW: Performance Evaluation of Hagatna Wastewater Treatment
>>> Facility
>>>
>>>
>>>> Mike,
>>>>
>>>> GWA will make every attempt to avoid bypassing the WWTP during the work
>>>> on
>>>> the pump station. We do in fact have a detailed plan to install
>>>> temporary
>>>> bypass pumps in the pump station inlet manholes. The potential
bypass
>>>> should
>>>> occur only in the event of a pump failure. If that were to occur,
GWA
>>>> would
>>>> open the bypass sluice gate while the failure was being addressed.
This
>>>> would, as noted in the letter previously sent, prevent the overflow
of
>>>> sewage from the collection system upstream of the pump station.
>>>>
>>>> Since the bypass will occur only in the event of an emergency,
prior
>>>> public
>>>> notice for any given event would, of course, be impossible. We will

>>>> send
>>>> a
>>>> copy of the draft notice to you prior to publishing it.
>>>>
>>>> The pump station contract could not be effected pending
verification
>>>> that

>>> funding was in place. The contract was therefore not signed until
>>>> January,
>>>> and the work won't begin until late next month or early May due to
the
>>>> lead
>>>> time for ordering materials. We will be expediting the work as much
as
>>>> possible, but it is expected to take six months at a minimum.
>>>> Unfortunately,
>>>> as you noted, this will not meet the Stipulated Order deadline.
>>>>
>>>> Please let me know if you need any additional information.
>>>>
>>>> v/r,
>>>> Julie
>>>>

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DECLARATION OF MICHAEL J. LEE
EXHIBIT 7

"Julie Shane"

<jshane@guamwaterworks.org>

To

Michael Lee/R9/USEPA/US@EPA

07/18/2007 06:09

cc

PM

"Kevin Patrick"

<kevin.patrick@veoliawater.com.hk

>, "Paul Kemp"

<paulkemp@guamwaterworks.org>

Subject

RE: Hagatna and N. Dist

Performance Evaluations

Mike,

The portion we shortened was the process control evaluation. This CAN be done concurrently with reviewing of the DMR results, but initial evaluation

will almost certain result in some additional tweaking of the processes.

I

don't want to shortened the DMR evaluation as we'll need a couple of months

of data to fully assess our results.

You'll get a formal response on this and the bypass shortly; the hold-up is identifying funds for some of these items so that I can give you more realistic dates. Although tomorrow is a holiday, Don & I plan to sit down and review funding sources so that I can get you something out either tomorrow or Monday. Hopefully this is satisfactory.

Thanx,
Julie